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ACCOMPLISHMENTS

RL-0011 Nuclear Materials Stabilization & Disposition

RL-0011.R1: Plutonium Finishing Plant D&D

At the Plutonium Finishing Plant (PFP), CH2M HILL Plateau Remediation Company (CHPRC) is using funds from the American Recovery and Reinvestment Act (Recovery Act) to clean out former production and laboratory areas of the 234-5Z building. Last week, eight ventilated sample storage cabinets previously removed from room 174 were relocated to an IP-1 container. The cabinets are awaiting shipment to Perma-Fix Northwest (PFNW) where they will be compacted prior to disposal at the Environmental Restoration Disposal Facility (ERDF) as low-level waste in early December.

The work package for loading the 2734-ZJ vendor-owned nitrogen tank onto a trailer for shipment to the 400 Area was reviewed and approved by the PFP Hazard Review Board (HRB), setting the stage for removal of the structure in December.

In PFP's former Analytical Laboratory, process equipment removal was completed on glove box 146-5, the last of five glove boxes in room 146. New gloves were installed in preparation for process equipment removal from three additional glove boxes in room 136. Additionally, the third and final hood in room 221E of PFP's former Standards Laboratory was secured from ventilation; all three hoods will be removed from the building following sampling for beryllium contamination.

Additional field work teams for the RMA/RMC Line process area was deployed last week and the team successfully changed out the inlet filter on process glove box HA-46. The three other crews assigned to RMA/RMC Line continued mechanical isolation of glove boxes HC-230C-2, HA-19B1, and HA-19B2; initiated another decontamination cycle in HC-230C-3; and continued to prepare glove boxes HA-46 and HC-227S for process equipment removal.

Planning for the removal of the highly contaminated process vacuum system from the 234-5Z building is now complete, with the exception of a revision to the Criticality Safety Evaluation Report. Criticality safety issues in other projects delayed initiation of this work to January. Non-destructive assay was completed on more than 60% of the nearly one mile of vacuum system piping in the 234-5Z building.

Insulators removed asbestos from an additional 222 feet of piping, bringing the total removed with the help of Recovery Act funding to more than 5,700 feet. Engineering teams also continued walk downs related to cold and dark isolation of the now-empty PFP vault complex.



Photo 1

A radiological control technician surveys a package of ventilated storage cabinets removed from room 174 of the 234-5Z building. The cabinets were loaded into a container to be shipped to Perma-Fix Northwest for compaction.



Photo 2

A worker loads ventilated storage cabinets removed from the 234-5Z building into a container for storage until the waste can be shipped to Perma-Fix Northwest for compaction.



Photo 3

Eight ventilated storage cabinets removed from the 234-5Z building awaiting shipment to Perma-Fix Northwest.

RL-0013 Solid Waste Stabilization & Disposition

RL-0013C:R1.1: Mixed Low-Level Waste (MLLW) Treatment

Of the 1,800 m³ of currently stored MLLW planned for treatment and disposal under the Recovery Act:

- 648 m³ of the 1,800 m³ have been shipped to date including:
 - 267 m³ of low-level waste (LLW) have been treated and disposed
 - 381 m³ are at off-site treatment facilities awaiting processing. Treatment is scheduled for FY 2010.

Two shipments of waste were sent out for treatment this week. Eighty-six drums (17.9 m³) of LLW debris were shipped on Nov. 17 from the Central Waste Complex (CWC). Twenty-one drums (6.8 m³) of MLLW debris were shipped on Nov. 19 from the Waste Receiving and Processing facility (WRAP). Both shipments were sent to PFNW and will be non-thermally treated and grouted or encased in a special concrete, a process called macro encapsulation.



Photo 4

A worker loads a shipment of 86 drums containing low-level waste debris for shipment to Perma-Fix Northwest. Using Recovery Act funds, CHPRC will treat and dispose of an estimated 1,800 m³ of mixed low-level and low-level waste.



Photo 5

A shipment of 86 drums containing 17.9 m³ of low-level waste debris is loaded for shipment to Perma-Fix Northwest. The shipment is part of CHPRC's ongoing effort to reduce the amount of stored waste on the Hanford Site.



Photo 6

A shipment of 21 drums containing 6.8 m³ of mixed low-level waste debris is loaded for shipment from the Waste Receiving and Processing facility to Perma-Fix Northwest.

RL-0013C:R1.2: Transuranic (TRU) Waste:

Of the 2,500 m³ of suspect TRU waste planned for retrieval under the Recovery Act:

- 17.8 m³ are staged, pending shipment.
- 428.6 m³ have been shipped to a treatment, storage, or disposal facility.

Removal activities continued in 3A Trench 17 with workers completing the excavation of the east ramp and continuing site preparation for the disassembly of Box 82. Workers performed a mock-up of Boxes 80 and 82 at the simulation test site for the use of a long-reach saw with a protective cover in the presence of misting. The team conducted an HRB meeting for the disassembly of Boxes 80 and 82 and the resulting actions are being addressed. Other activities in the 3A burial ground occurred in Trench 8 where workers continued assembling available data for containers targeted for retrieval, identified an area for ground-penetrating radar mapping (GPR), and drafted a statement of work (SOW) for the GPR services. Workers also prepared a plan to mitigate hazards associated with containers in 4B Trench 11 and placed the trench into "safe standby" for the next three months, pending the resolution of conditions in 4B Trench 10. Workers also completed a factory acceptance test for the Mobile Radioactive Decontamination Unit (MDU) trailer at the fabricator's Denver, Colo., facility and 10 drums (2.0 m³) of TRU waste were sent to the CWC.



Photo 7

At the simulation test site, workers perform a mock-up of Boxes 80 and 82 for the use of a long-reach saw with a protective cover in the presence of misting, which is used for contamination control. Mock-ups allow workers to test tools and become familiar with processes before performing the actual work.

Alpha Caisson Retrieval Project

The Alpha Caisson Retrieval Project Management Group completed the Project Review Board self-assessment and completed the management assessment on the project execution plan and project management procedures. Two minor issues were noted. The integrated conceptual design report (CDR) outline was completed on Nov. 18, the SOW regarding the final design of the waste retrieval system (WRS) was issued for internal review, and the technical readiness level report is currently in review.

The WRS team finalized the alternative selection for the retrieval design as well as the work breakdown structure (WBS) for the design, procurement, and construction. The team also continued developing conceptual drawings. The waste processing system (WPS) team completed the WBS for the processing design and continued working on the WBS for procurement and construction. The WPS team also initiated the conceptual estimate and continued developing conceptual drawings.

TRU Project Drum Repackaging

Of the 1,210 drums (400 m³) planned to be characterized and repackaged in FY2010:

- 494 drums have been quick-scanned to date.
- Repack instructions (corrective actions) were developed for 671 drums.

RL-0030 Soil & Groundwater Remediation, Groundwater/Vadose zone

RL-0030.R1: Central Plateau Soil & Groundwater

Recovery Act funding is being used across the Hanford Site to prepare for the drilling of numerous wells that will be used for monitoring, extracting, and remediating groundwater. Recent progress includes:

- *100-NR-2*: Drilling on the 171 wells for the expansion of the apatite barrier continued with 24 wells in process. Twenty-three wells have been drilled to total depth and 10 have been constructed and developed. Development of the shallow wells cannot be completed because there is no water in the well as a result of low river elevations. Development will continue when the river elevation rises to a sufficient level.
- *100-HR-3*: In the D Area, 14 wells are planned to be drilled in support of the new DX Groundwater Treatment Facility. Five wells are in process and five have been drilled and constructed, while three have been developed. The remaining well locations were approved by the State Historic Preservation Officer this past week. The construction of the roads and pads for these wells was restarted last week.
- *200-BP-5*: To support remediation efforts in the 200-BP-5 area, drilling on two of the three wells continued last week with both wells being drilled to total depth.
- *200-ZP-1 Expansion*: Drilling continued on six wells. Two of the six wells have been developed, three of the six wells are under construction, and one of the six wells continues to be drilled (current depth is 452 feet).
- *100-BC-5*: Drilling continued on two of the four planned wells with both wells being drilled to total depth.



Photo 8

At a 100-BC-5 drill site, a worker taps a drill casing to shake the soil loose. As drilling equipment is removed from the ground, workers ensure loose soil is contained in drums or protective sleeves until it can be sampled to identify possible contamination.



Photo 9

Workers prepare samples of soil removed from a 100-BC-5 drill site while a worker in the background continues work on one of four wells currently under construction.



Photo 10

Workers from the subcontractor Water Development Corporation operate a drill at the 200-ZP-1 site, where CHPRC is currently drilling on six wells that will support the 200 West Groundwater Treatment Facility.

RL-0040 Nuclear Facility D&D – Remainder of Hanford

RL-0040.R1.1: U Plant/Other D&D

Workers continued painting to stabilize loose contamination in the U Plant Canyon. More than 10,000 square feet of surface area on the canyon deck and walls are now stabilized. Relocation of excess equipment from the canyon deck into cell 7 was completed; this is the second of 40 cells to be filled with equipment.

Removal of asbestos and other hazardous materials continued to prepare 224-U and 224-UA buildings for demolition. At 224-UA, the Hammer mill/towers area is cleaned up following completion of asbestos abatement, and installation of scaffolding to support abatement in the calciner area is nearly complete. At 224-U, preparations continued toward the removal of residual acid from tanks in C Cell, scaffold erection around the tower was completed, and installation of glove bags on the south side piping continued.

An additional walk down was completed at the 209-E building, Hanford's former Critical Mass Laboratory in 200 East Area, to support the final design of the containments to be used in removing and packaging process equipment from the facility prior to demolition. Waste containers are being procured and staged at the facility to support future work.

Radiological surveys were completed on four of the nine structures in the 200E core industrial complex that are scheduled for demolition in FY2010. Radiological surveys and safety inspections continued on the remaining facilities. Cold and dark isolation was previously completed on the 614 building, just outside of 200E, and it is ready for demolition.

Specifications for three additional multi-processors were finalized and put out for bid while work continues on development of specifications for two additional hydraulic hammers. Purchase orders were issued and fabrication is underway on all remaining heavy equipment needed to support accelerated D&D across the Central Plateau. Most of the remaining equipment is scheduled to arrive onsite by the end of December, although a few pieces of equipment will not be received until the first quarter of 2010.



Photo 11

Workers being surveyed before leaving the work site at the U Plant ancillary facilities, where asbestos abatement is in progress on the 224-U and 224-UA buildings.



Photo 12

Asbestos abatement continues on the tower of the 224-U building.



Photo 13

Asbestos abatement continues on the tower of the 224-U building.

RL-0040.R1.2: Outer Zone Waste Sites/D&D

Facility D&D

Debris and soil removal was completed at the former site of the 212-P building, completing the removal of the three 212-NPR interim storage buildings. Radiological surveys, soil sampling, backfilling, and revegetation will take place over the next couple of months. The buildings were historically used to temporarily store freshly irradiated fuel rods from the 100 Area production reactors until they could be processed in the 200 Area fuel reprocessing facilities.

Six temporary crew and restroom trailers recently installed to support D&D of excess facilities on the Arid Lands Ecology (ALE) reserve were turned over to the D&D organization for occupancy. Asbestos sampling was completed and abatement is ongoing at the lower ALE site. Cold and dark isolation of the structures on the lower ALE site was also completed, and the D&D team began mobilizing equipment and materials to be used during demolition.



Photo 14

Workers oversee the removal of soil from beneath the former 212-P building in the 200 North Area. Once soil removal and sampling is finished, this site as well as the sites of the 212-N and 212-R buildings will be backfilled and revegetated, completing work on the 212-NPR building complex.



Photo 15

An excavator removes soil from the 212-P building site. With the building demolished and the contaminated soils removed, CHPRC will sample and survey the soil before backfilling and revegetating this site as well as the sites of the former 212-N and 212-R buildings.

Waste Sites

Recovery Act funding is being used across the Hanford Site to prepare for and remediate outer zone waste sites in order to cleanup legacy waste and protect the groundwater. Recent progress includes:

- *MG-1:* Review of the Response Action Completion Report for waste sites 200-E-110, 200-E-101, 600-21, and 600-51 is in process.
- *CW-3:* Remediation of the 216-N-1 waste site was initiated. The project previously received approval for the use of super dump trucks and completed construction of the scaffold platform. The site includes three ponds (216-N-1, 216-N-4, and 216-N-6), three pipelines, two unplanned release sites, and a solid waste site.
- *BC Control Area:* Mobilization of trailers for work crews was completed. Soil remediation continued with three super dump trucks delivering contaminated soil to ERDF.



Photo 16

Remediation begins at the 216-N-1 waste site, located in the 200-CW-3 operable unit in the 200 North Area.

RL-0041 Nuclear Facility D&D – River Corridor Closure Project

RL-0041.R1.1: 100K Area Remediation

Facility D&D

Workers removed over 3,500 cubic yards of soil from the exterior of the 183KW Sedimentation Basin to provide access for D&D crews to begin demolishing the basin. During reactor operations, the basin received river water for processing to be used as reactor cooling water. The basin had a capacity of 28 million gallons and comprised six bays, each approximately 50,000 square feet in size. Altogether, the bays processed over 150,000 gallons per minute. CHPRC is using stimulus funds to support the demolition of the basin as well as a headhouse, reservoirs, and clearwells. To date, Recovery Act funds have been used at the 183KW complex to remove a chlorine vault slab and a chemical storage silo.



Photo 17

Removing soil from the exterior of the 183KW Sedimentation Basin. Workers removed the soil to provide access for the D&D team to begin demolition of the basin.



Photo 18

A worker deposits soil removed from the exterior of the 183KW Sedimentation Basin. After the soil was removed, CHPRC began demolition of the approximately 300,000 square-foot basin.



Photo 19

Soil removed from the exterior of the 183KW Sedimentation Basin.

Waste Sites

Recovery Act funding is being used in the 100K Area to remediate waste sites in order to cleanup legacy waste and stop the potential migration of contamination to the groundwater. Recent progress includes:

- *UPR-100-K-1*: Remediation continued in the waste site beneath the former K East Fuel Storage Basin.
- *100-K-3*: Previously, ground-penetrating radar scans of this pipeline waste site identified an underground concrete structure and resulted in the need for an engineering evaluation. The evaluation determined that the structure contained ducts that housed de-energized electrical lines. The ducts were opened and asbestos was found, requiring work plans to be amended.
- *100-K-47*: Excavation away from the identified line was initiated to sever the 100-K-47 lines from the outfall effluent line. The planning, review, and approval for this activity continued last week. This waste site consists of multiple pipes that drained various facilities or areas and dumped directly into the outfall or retention basins.
- *100-K-56*: Remediation of this pipeline waste site continued. This waste site is a 72-inch diameter primary effluent pipeline that discharged reactor cooling water from the 105KE Reactor.

UPCOMING EVENTS

RL-0011 Nuclear Materials Stabilization & Disposition

RL-0011.R1: Plutonium Finishing Plant D&D

- Initiate chemical decontamination of glove box 146-5, and process equipment removal from glove boxes 136-1,2,3.
- Remove three hoods in room 221E.
- Continue decontamination of glove box HC-230C-3 and initiate decontamination of HC-60.
- Initiate process equipment removal on process glove boxes HA-19B1, B2, HA-46, and HC-227S.
- Reassess the radiological status and determine a disposition path for six glove boxes previously removed from rooms 131 and 137 of the Analytical Laboratory.
- Complete removal/return of the 2734-ZJ nitrogen storage tank to the vendor and remove remaining appurtenances to slab-on-grade.
- Initiate deactivation of excess safety showers and lights in 234-5Z building.

RL-0013 Solid Waste Stabilization & Disposition

RL-0013C:R1.1: MLLW Treatment

- No planned shipments due to the holiday.

RL-0013C:R1.2: TRU Waste

- 3A Trench 17 Removal:
 - Conduct follow-up HRB meeting regarding the disassembly of Boxes 80 and 82.
 - Complete excavation around the bottom of Boxes 3 and 12 and complete engineering evaluations to determine if the boxes are removable.
 - Update the disassembly work package for Boxes 80 and 82 to address HRB comments.
 - Continue tumbleweed removal and backfill for the disassembly of Box 82.
- Complete SOW for GPR mapping in 3A Trench 8.
- Begin developing site logistics and operating plans for 3A Trench 8.
- Receive the MDU at Hanford.
- Alpha Caisson Retrieval:
 - Issue the Technical Readiness Report.
 - Kick-off project review board independent reviews on Nov. 24.
 - Safety Design Integration Team hazards analysis meeting on the WRS schedule for the week of Nov. 30.
 - Finalize the WBS for WPS CDR by Dec. 2.
 - The Project Review Board meeting is scheduled for Dec. 14.
 - Issue CDR for review on Dec. 21.

RL-0030 Soil & Groundwater Remediation, Groundwater/Vadose zone

RL-0030.R1: Central Plateau Soil & Groundwater

- Continue construction of the DX Groundwater Treatment Facility.
- Continue drilling at 200-ZP-1, 100-HR-3-H, 100-HR-3-D, 100-BC-5, and 100-NR-2.
- Continue developing decision documentation.

RL-0040 Nuclear Facility D&D – Remainder of Hanford

RL-0040.R1.1: U Plant/Other D&D

- Receive delivery of the remaining D&D heavy equipment.
- Continue asbestos removal and other preparations for demolition of U Plant ancillary facilities 224-U, 224-UA, and 203-UX.
- Continue applying contamination fixative within the U Plant canyon and relocating equipment into cells beneath the canyon deck.
- Complete preparations for demolishing the 200 East Area core industrial complex.
- Complete detailed planning for cleanout of the 209-E building.

RL-0040.R1.2: Outer Zone

- Complete surveys and sampling and backfill the site of the former 212-NPR buildings.
- Complete asbestos abatement, mobilize resources, and begin preparations for demolishing the lower ALE facilities on Rattlesnake Mountain.
- Continue remediation at the BCCA and 200-CW-3 waste sites.

RL-0041 Nuclear Facility D&D – River Corridor Closure Project

RL-0041.R1.1: 100K Area Remediation

- Continue remediation of the soils beneath the former K East Fuel Storage Basin and the pipeline waste sites (100-K-47, 100-K-56, and 100-K-3).
- Continue demolition of the 183KW Sedimentation Basin.
- Continue asbestos removal from 183.1 KW Headhouse.
- Continue Preliminary Design activities for the 105KE Reactor Core Removal.
- Continue debris removal from the KW basin.
- Complete comment resolution for River Water Isolation, Electrical Power Isolation, and the KW Basin Airborne Contamination Remediation projects.
- Perform the reactor Graphite Tumble Test to obtain dusting properties of the reactor graphite.